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FEE TRANSMITTAL
For FY 2005

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Complete if Known	
Application Number	10/604,275
Filing Date	July 8, 2003
First Named Inventor	Dirk Sonksen
Examiner Name	Yam, Stephen K.
Art Unit	2878
Attorney Docket No.	21295.0056US1 (H5640US)

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT ($) 2,090

METHOD OF PAYMENT (check all that apply)

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☑ Deposit Account Deposit Account Number: 502233 Deposit Account Name: Houston Eliseeva LLP

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1. BASIC FILING, SEARCH, AND EXAMINATION FEES

Application Type	FILING FEES Fee ($)	Small Entity Fee ($)	SEARCH FEES Fee ($)	Small Entity Fee ($)	EXAMINATION FEES Fee ($)	Small Entity Fee ($)	Fees Paid ($)
Utility	300	150	500	250	200	100	
Design	200	100	100	50	130	65	
Plant	200	100	300	150	160	80	
Reissue	300	150	500	250	600	300	
Provisional	200	100	0	0	0	0	

2. EXCESS CLAIM FEES

Fee Description	Fee ($)	Small Entity Fee ($)
Each claim over 20 (including Reissues)	50	25
Each independent claim over 3 (including Reissues)	200	100
Multiple dependent claims	360	180

Total Claims ____ - 20 or HP = ____ Extra Claims × ____ Fee ($) = ____ Fee Paid ($)
HP = highest number of total claims paid for, if greater than 20.

Indep. Claims ____ - 3 or HP = ____ Extra Claims × ____ Fee ($) = ____ Fee Paid ($)
HP = highest number of independent claims paid for, if greater than 3.

Multiple Dependent Claims: Fee ($) ____ Fee Paid ($) ____

3. APPLICATION SIZE FEE

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

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SUBMITTED BY			
Signature	Maria Eliseeva	Registration No. (Attorney/Agent) 43,328	Telephone 781-863-9991
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TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Application Number	10/604,275
Filing Date	July 8, 2003
First Named Inventor	Dirk Sonksen
Art Unit	2878
Examiner Name	Yam, Stephen K.
Total Number of Pages in This Submission: 19	Attorney Docket Number: 21295.56US1 (H5640US)

ENCLOSURES (Check all that apply)

- [x] Fee Transmittal Form
  - [ ] Fee Attached
- [ ] Amendment/Reply
  - [ ] After Final
  - [ ] Affidavits/declaration(s)
- [ ] Extension of Time Request
- [ ] Express Abandonment Request
- [ ] Information Disclosure Statement
- [ ] Certified Copy of Priority Document(s)
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  - [ ] Reply to Missing Parts under 37 CFR 1.52 or 1.53
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Remarks

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Name	Houston Eliseeva LLP		
Signature	Maria Eliseeva		
Printed name	Maria Eliseeva		
Date	January 29, 2007	Reg. No.	43,328

CERTIFICATE OF TRANSMISSION/MAILING

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Signature	Maria Eliseeva		
Typed or printed name	Maria Eliseeva	Date	January 29, 2007

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re:	Dirk Sönksen	Confirmation No:	1274
Serial No:	10/604,275	Group:	2878
Filed:	July 8, 2003	Examiner:	Yam, Stephen K.
For:	Method and Apparatus for Scanning a Specimen Using an Optical Imaging System		
Customer No.:	29127		
Attorney Docket No.	21295.56		

APPELLANT'S BRIEF

VIA FACSIMILE: **571-273-8300**
Mail Stop Appeal Brief- Patents
Commissioner for Patents
P.O. Box 1450,
Alexandria, Virginia 22313-1450

Sir:

This is the Applicants' appeal from the final Office Action, mailed February 28, 2006 (Paper No. 0206).

Real Party in Interest

Leica Microsystems Semiconductor GmbH, the Assignee of the present application, is the real party in interest.

Related Appeals and Interferences

There are no related appeals or interferences.

Status of Claims

Claims 1-21 are pending in this application. Claims 1-21 are rejected.

Status of Amendments

All amendments have been entered. There were no post final amendments or proposed amendments.

Summary of Claimed Subject Matter

Independent Claim 1 recites a method for scanning a wafer using an optical imaging system and a scanning stage, comprising the steps of positioning the wafer with a constant thickness on the scanning stage, the wafer having three-dimensional features within a focusing depth of the imaging system; calibrating the scanning stage by obtaining and storing height values Z at different calibration positions X, Y of the scanning stage, and thereby generating a height profile of the scanning stage; scanning the wafer, and thereby determining a reference height Z_{ref} of the wafer at the beginning of a specimen scan, traveling to wafer points X_p, Y_p using the scanning stage, setting, while traveling to a respective wafer point X_p, Y_p, a wafer height position Z_p pertinent to the respective wafer point X_p, Y_p, the wafer height position Z_p being determined from the reference height Z_{ref} and the height profile of the scanning stage, and acquiring an image and/or performing a measurement at the respective wafer point X_p, Y_p. (Specification page 1, paragraphs [0008]-[0015], in the Application as published).

Dependent Claim 2 recites a method as defined in Claim 1, wherein images of the wafer are acquired by means of a camera, and/or measurements on the wafer being made by means of an optical measurement device, at the wafer points X_p, Y_p. (Specification page 1, paragraphs [0015]-[0016], in the Application as published).

Dependent Claim 3 recites a method as defined in Claim 1, wherein the reference height Z_{ref} of the wafer is identified at the beginning of the wafer scan by focusing with a focusing system at a reference location X_{ref}, Y_{ref} of the wafer. (Specification pages 4-5, paragraph [0056], in the Application as published).

Dependent Claim 4 recites a method as defined in Claim 1, wherein upon calibration of the scanning stage, the height values Z are obtained by focusing with a focusing system. (Specification page 2, paragraph [0026], in the Application as published).

Dependent Claim 5 recites a method as defined in Claim 1, wherein during the wafer scan, the image is acquired and/or the measurement is made without stopping the scanning stage at the respective wafer point X_p, Y_p (Specification page 5, paragraph [0059], in the Application as published).

Dependent Claim 6 recites a method as defined in Claim 1, wherein with wafer points X_p, Y_p arranged line-by-line, the wafer points X_p, Y_p are scanned in meander fashion. (Specification page 2, paragraph [0027], in the Application as published).

Dependent Claim 7 recites a method as defined in Claim 1, wherein the height values Z identified at the calibration positions X, Y are stored in a lookup table. (Specification page 2, paragraph [0028], in the Application as published).

Dependent Claim 8 recites a method as defined in Claim 1, wherein the wafer height positions Z_p at the wafer points X_p, Y_p are determined, by interpolation or mathematical approximation functions, from the height profile of the scanning stage. (Specification page 3, paragraph [0032], in the Application as published).

Dependent Claim 9 recites a method as defined in Claim 7, wherein if the calibration positions X, Y and the wafer points X_p, Y_p are coincident, the wafer height position Z_p is determined from the corresponding height value Z from the lookup table, and the reference height Z_{ref}. (Specification page 3, paragraph [0033], in the Application as published).

Dependent Claim 10 recites a method as defined in Claim 1, wherein for calibration of the scanning stage, a flat substrate is placed onto the scanning stage. (Specification page 2, paragraph [0026], in the Application as published).

Dependent Claim 11 recites a method as defined in Claim 1, wherein the optical imaging system is a microscope. (Specification page 3, paragraph [0039], in the Application as published).

Dependent Claim 12 recites a method as defined in Claim 1, wherein the optical imaging system is a macroscope. (Specification page 3, paragraph [0039], in the Application as published).

Dependent Claim 13 recites a method as defined in Claim 3, wherein the focusing system is an LED or laser autofocus system. (Specification page 4, paragraph [0051], in the Application as published).

Dependent Claim 14 recites a method as defined in Claim 2, wherein an image field of the camera and the spacings of the wafer points X_p, Y_p are selected in such that an image of the entire wafer results when the images of all the wafer points X_p, Y_p are juxtaposed. (Specification page 3, paragraph [0036], in the Application as published).

Independent Claim 15 recites an apparatus for scanning a wafer using an optical imaging system and a scanning stage, comprising: a control unit for displacing the scanning stage, to at least one calibration position X, Y during a calibration of the scanning stage in order to obtain a height profile of the scanning stage, and for displacing to at least one wafer point X_p, Y_p during scanning of the wafer of a constant thickness, the wafer having three-dimensional features within a focusing depth of the imaging system, and for setting a wafer height position Z_p at each wafer point X_p, Y_p; a memory for storing the height profile of the scanning stage; a computation unit for determining the wafer height position Z_p at the respective wafer points X_p, Y_p from a reference height Z_{ref} of the wafer and from the height profile of the scanning stage; and an optical device for acquiring data at each wafer point X_p, Y_p. (Specification pages 1-2, paragraphs [0016]-[0020], in the Application as published).

Dependent Claim 16 recites an apparatus as defined in Claim 15, wherein the optical device is a camera for acquiring images at each wafer point X_p, Y_p. (Specification page 2, paragraph [0020], in the Application as published).

Dependent Claim 17 recites an apparatus as defined in Claim 15, wherein the optical device is an optical measurement device for performing a measurement at respective wafer points X_p, Y_p. (Specification page 3, paragraph [0038], in the Application as published).

Dependent Claim 18 recites an apparatus as defined in Claim 15, wherein a focusing system is provided at least for focusing onto at least one reference location X_{ref}, Y_{ref} in order to obtain a reference height value Z_{ref}. (Specification page 2, paragraph [0026], in the Application as published).

Dependent Claim 19 recites an apparatus as defined in Claim 15, wherein the optical imaging system is a microscope. (Specification page 3, paragraph [0039], in the Application as published).

Dependent Claim 20 recites an apparatus as defined in Claim 15, wherein the optical imaging system is a macroscope. (Specification page 3, paragraph [0039], in the Application as published).

Dependent Claim 21 recites an apparatus as defined in Claim 17, wherein the measurement device is an optical spectrometer, an ellipsometer, or a layer thickness measurement system. (Specification page 3, paragraph [0038], in the Application as published).

Grounds of Rejection to be Reviewed on Appeal

I. Whether Claims 1-6, 8, and 11-21 are non-obvious under 35 U.S.C. 103(a) over Yamamura et al. (US Patent 5,780,866) in view of Katz et al. (US Patent No. 6,172,349).

II. Whether Claims 7, 9, and 10 are non-obvious under 35 U.S.C. 103(a) over Yamamura et al. in view of Katz et al, further in view of Fujimoto (US Patent No. 6,245,585).

Argument

For an obviousness rejection to be proper, the Patent Office must meet the burden of establishing a prima facie case of obviousness. The Patent Office must meet the burden of establishing that all elements of the invention are disclosed in the cited publications, which must have a suggestion, teaching or motivation for one of ordinary skill in the art to modify a reference or combined references.[1] The cited publications should explicitly provide a reasonable expectation of success, determined from the position of one of ordinary skill in the art at the time the invention was made.[2] As argued below, this burden has not been met.

I. With regard to Issue I on appeal, Applicants argue as follows.

The examiner has stated regarding Claims 1 and 15 that, in particular, Yamamura discloses

> "calibrating the scanning stage (2) (and displacing using a control unit (3) (see Fig. 1) by obtaining and storing height value Z at different calibration positions X, Y of the scanning stage (see Col. 18, lines 26-35), and thereby generating a height profile of the scanning stage and storing it in a memory (see Col. 16, lines 44-48 and Col. 18, lines 28-45).

Applicants' attorney examined the referenced portions of Yamamura and found no disclosure of calibration of the scanning stage as claimed in Claims 1 and 15. Figs. 5A and 5B of Yamamura describe measuring the height is the circuit board in two different coordinate systems:

> "the axes of abscissa of Figs. 5A and 5B represent the positions in the direction of scanning of the stage; on the other hand, the axis of ordinate of FIG. 5A represents the detecting optical system-based board surface height and the axis of ordinate of FIG. 5B represents the height of a board surface from the focal plane of the optical system and the stage-based board surface height." (Col. 18, lines 13-21)

So Yamamura proposes two coordinate systems in which "[O]ptical system-based <u>board heights</u> 31a to 31c have been already detected and memorized (recorded), and the

[1] *In re Sang Su Lee, 277 F.3d 1338, 61 USPQ2d 1430 (Fed. Cir. 2002).*
[2] *In re Fine, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988); In re Wilson, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970);*
Amgen v. Chugai Pharmaceuticals Co., 927 U.S.P.Q.2d, 1016, 1023 (Fed. Cir. 1996);

differences 32a to 32c between the board height and the focal plane height of the optical system have been calculated." (Col 18, lines 28-32, emphasis added).

Furthermore, "in FIG. 5B, the stage height was read at the center position of each window, thereby, focal plane heights 33a to 33c of the stage-based optical system already have been detected and memorized (recorded). Stage-based board heights 34a to 34c are calculated from the focal plane heights 33a to 33c of the optical system and the differences 32a to 32c between the board height and the focal plane height." (Col. 18, lines 33-39, emphasis added). Therefore, contrary to the examiner's statement, both measurements reflected in Figs. 5A and 5B are done with the circuit board on the scanning stage, which is not the calibration step of the scanning stage claimed in Claims 1 and 15.

Furthermore, the disclosure in Yamamura with regard to Col. 16, lines 44-48 does not teach calibrating the scanning stage by obtaining and storing height values at different calibration positions X, Y. Yamamura discloses in the Brief Description of the Drawings section that "FIGS. 3(a) through 3(d) are diagrams for describing a board height detection method which may be used by the board height detection device shown in FIG. 1..." (emphasis added). Yamamura discloses that images in Figs. 3A and 3B are portions of an image obtained during a stage scan. These portions are "examples of regions for detecting the height of a board surface..." (Col. 16, lines 47-48). Features 23a and 23b on those figures represent part-mounted regions on the circuit board.

Applicants' attorney also performed a search of the whole disclosure of the Yamamura patent and found not a single occurrence of the words "calibration" or "calibrate" in that patent. It is logical to assume that of the Yamamura patent actually disclosed the step of calibrating the scanning stage, these words would have appeared in the 34 columns of the text of that patent at least once.

With regard to the disclosure in Katz, the examiner stated that Katz et al. teach "a similar imaging system and method with a specimen (100) as a wafer...with a constant thickness (see Fig. 1 and 5) on a scanning stage (101) and having three-dimensional features within a focusing depth (combined focusing depth of cameras 110 and 156 – see Fig. 5) of the imaging system (see Col. 6, lines 9-28)".

Applicants disagree. Katz discloses in the referenced lines in Col. 6 that "[A] typical overlay target on wafers has two levels which can be up to 2 microns apart, vertically. <u>This separation is more than the depth of focus of the microscope objectives</u> normally used, even when the microscope is operated in the conventional or non-interferometric mode." (emphasis added). The levels of a target on the wafer in Katz are such that they are not within the focusing depth of the imaging system. Katz uses a second focusing depth, different from the first focusing depth, to keep different levels of a target in focus. Contrary to the disclosure in Katz, Claims 1 and 15 claim "the wafer having three-dimensional features within <u>a focusing depth</u> of the imaging system". Not two different focusing depths, as disclosed in Katz.

Therefore, Applicants assert that the burden of establishing that all elements of the invention as claimed in Claims 1 and 15 are disclosed in the cited publications has not been met by the Patent Office. Consequently, the obviousness rejection should be withdrawn and Claims 1 and 15 should be allowed over the combination of Yamamura and Katz.

Regarding Claim 2, Applicants repeat the reasons and arguments as presented with regard to Claim 1. For the same reasons all elements of the invention as claimed in Claim 2 are not disclosed in the cited publications. Therefore, Claim 2 is allowable.

With regard to Claims 3 and 18, Applicants repeat the reasons and arguments regarding the failure of the combination of Yamamura and Katz to disclose the calibration of the scanning stage step as claimed in Claims 3 and 18. For the same reasons Claims 3 and 18 are allowable over the combination of Yamamura and Katz.

With regard to Claim 4, Yamamura discloses no calibration of the scanning stage as claimed in Claim 4. As asserted above, Col. 18, lines 22-45 do not disclose calibrating the scanning stage, but rather measuring the circuit board positions on the stage. Therefore, Claim 4 is allowable over the combination of Yamamura and Katz.

With regard to Claim 5, Col. 22, lines 4-12 of Yamamura read that "[I]n the system control part 5a, the degree of control for the Z-stage is operated based on a continuously-detected board surface height 20, and the Z-stage is controlled continuously through the stage control part 3a so that the distance between the height detection optical system 6 and the board 1 is kept constant." There is nothing in that referenced portion of

Yamamura disclosing that the measurements are made without stopping the scanning stage. Continuously detected board surface height does not necessarily equal the continuously moving scanning stage. Furthermore, Col. 2, lines 47-48 of Yamamura say that "high speed continuous scanning is carried out". This statement does not necessarily equal the element of not stopping the scanning stage at the respective wafer points X_p and Y_p. Therefore, Applicants assert that Claim 5 is allowable over the combination of Yamamura and Katz.

With regard to Claim 6, Applicants repeat the reasons and arguments regarding the failure of the combination of Yamamura and Katz to disclose the calibration of the scanning stage step as claimed in Claim 6. For the same reasons Claim 6 is allowable over the combination of Yamamura and Katz.

With regard to Claim 8, the examiner wrote that in Yamamura "the specimen height positions...are determined...from the height profile of the scanning stage (see Col. 18, lines 47 to Col. 19, line 8)." To the contrary, that referenced portion of Yamamura describes using a least square approximated straight line from the points corresponding to the circuit board heights. Further in that portion Yamamura discloses using stage-based focal plane heights 43a to 43c and the difference between the focal plane height of the optical system and the board surface height in the window 40c for further calculations. This is not a description of the height profile of the scanning stage, which is obtained at the calibration step and used in the mathematical approximation. Therefore, Claim 8 is allowable over the combination of Yamamura and Katz.

With regard to Claims 13-14, Applicants repeat the reasons and arguments regarding the failure of the combination of Yamamura and Katz to disclose the calibration of the scanning stage step as claimed in Claims 13-14. For the same reasons Claims 13-14 are allowable over the combination of Yamamura and Katz.

With regard to Claims 16-17 and 21, Applicants repeat the reasons and arguments regarding the failure of the combination of Yamamura and Katz to disclose the calibration of the scanning stage step as claimed in Claims 16-17 and 21. For the same reasons Claims 16-17 and 21 are allowable over the combination of Yamamura and Katz.

Regarding Claims 11, 12, 19 and 20, the examiner states that the combination of Yamamura and Katz teaches the method and apparatus in Claims 1 and 15. Applicants

assert, similarly to the arguments and reasons presented above, that the combination of Yamamura and Katz does not disclose the elements as claimed in Claims 1 and 15. Therefore, Claims 11, 12, 19 and 20 are allowable over the combination of Yamamura and Katz.

II. With regard to Issue II on appeal, Applicants argue as follows.

With regard to Claims 7 and 9 the examiner wrote that in addition to the combination of Yamamura and Katz, Fujimoto teaches "a step of calibrating a scanning stage by obtaining and storing height values Z at different calibration positions X, Y of the scanning stage (see Fig. 3 (201-203) and Col. 1, line 48 to Col. 2, lines 2)..."

Applicants disagree. Contrary to the assertion of the examiner, described in that excerpt is a method of adjusting a wafer with no disclosure of a separate step of calibrating the scanning stage to obtain the height profile of the stage. What Fujimoto describes is "setting the wafer"..., "directing a laser beam to the surface of the wafer"..., "analyzing the detected light and determining therefrom a vertical offset of the wafer" etc. The measurements are those of the wafer. No scanning stage height profile calibration step, as claimed in Claims 7 and 9, could be found in Fujimoto.

Therefore, the combination of Yamamura, Katz and Fujimoto does not disclose the calibration of the scanning stage step as claimed in Claims 7 and 9. For the same reasons as presented above, Claims 7 and 9 are allowable over the combination of Yamamura, Katz and Fujimoto.

Applicants disagree with other statements made by the examiner with regard to Claims 7 and 9 and reserve the right to address such statements further in the present appeal. Applicants believe that the reasons articulated in detail in the present response are sufficient to overcome the obviousness rejection of the final Office Action.

With regard to Claim 10, Applicants repeat the reasons and arguments regarding the failure of the combination of Yamamura, Katz and Fujimoto to disclose the calibration of the scanning stage step as claimed in Claim 10. For the same reasons Claim 10 is allowable over the combination of Yamamura, Katz and Fujimoto.

For the foregoing reasons, Applicants believe that the pending rejections should be withdrawn, and that the present application should be passed to issue. Should any questions arise, please contact the undersigned.

Respectfully submitted,

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Claims Appendix

1. (Previously Presented) A method for scanning a wafer using an optical imaging system and a scanning stage, comprising the steps of:

- positioning the wafer with a constant thickness on the scanning stage, the wafer having three-dimensional features within a focusing depth of the imaging system;
- calibrating the scanning stage by obtaining and storing height values Z at different calibration positions X, Y of the scanning stage, and thereby generating a height profile of the scanning stage;
- scanning the wafer, and thereby

  -- determining a reference height Z_{ref} of the wafer at the beginning of a specimen scan.

  -- traveling to wafer points X_p, Y_p using the scanning stage,

  -- setting, while traveling to a respective wafer point X_p, Y_p, a wafer height position Z_p pertinent to the respective wafer point X_p, Y_p, the wafer height position Z_p being determined from the reference height Z_{ref} and the height profile of the scanning stage, and

  -- acquiring an image and/or performing a measurement at the respective wafer point X_p, Y_p.

2.(Previously Presented) The method as defined in Claim 1, wherein images of the wafer are acquired by means of a camera, and/or measurements on the wafer being made by means of an optical measurement device, at the wafer points X_p, Y_p.

3.(Previously Presented) The method as defined in Claim 1, wherein the reference height Z_{ref} of the wafer is identified at the beginning of the wafer scan by focusing with a focusing system at a reference location X_{ref}, Y_{ref} of the wafer.

4.(Original) The method as defined in Claim 1, wherein upon calibration of the scanning stage, the height values Z are obtained by focusing with a focusing system.

5.(Previously Presented) The method as defined in Claim 1, wherein during the wafer scan, the image is acquired and/or the measurement is made without stopping the scanning stage at the respective wafer point X_p, Y_p.

6.(Previously Presented) The method as defined in Claim 1, wherein with wafer points X_p, Y_p arranged line-by-line, the wafer points X_p, Y_p are scanned in meander fashion.

7. (Original) The method as defined in Claim 1, wherein the height values Z identified at the calibration positions X, Y are stored in a lookup table.

8. (Previously Presented) The method as defined in Claim 1, wherein the wafer height positions Z_p at the wafer points X_p, Y_p are determined, by interpolation or mathematical approximation functions, from the height profile of the scanning stage.

9. (Previously Presented) The method as defined in Claim 7, wherein if the calibration positions X, Y and the wafer points X_p, Y_p are coincident, the wafer height position Z_p is determined from the corresponding height value Z from the lookup table, and the reference height Z_{ref}.

10. (Previously Presented) The method as defined in Claim 1, wherein for calibration of the scanning stage, a flat substrate is placed onto the scanning stage.

11. (Previously Presented) The method as defined in Claim 1, wherein the optical imaging system is a microscope.

12. (Previously Presented) The method as defined in Claim 1, wherein the optical imaging system is a macroscope.

13. (Previously Presented) The method as defined in Claim 3, wherein the focusing system is an LED or laser autofocus system.

14. (Previously Presented) The method as defined in Claim 2, wherein an image field of the camera and the spacings of the wafer points X_p, Y_p are selected in such that an image of the entire wafer results when the images of all the wafer points X_p, Y_p are juxtaposed.

15. (Previously Presented) An apparatus for scanning a wafer using an optical imaging system and a scanning stage, comprising:
    - a control unit for displacing the scanning stage, to at least one calibration position X, Y during a calibration of the scanning stage in order to obtain a height profile of the scanning stage, and for displacing to at least one wafer point X_p, Y_p during scanning of the wafer of a constant thickness, the wafer having three-dimensional features within a focusing depth of the imaging system, and for setting a wafer height position Z_p at each wafer point X_p, Y_p;
    - a memory for storing the height profile of the scanning stage;
    - a computation unit for determining the wafer height position Z_p at the respective wafer points X_p, Y_p from a reference height Z_{ref} of the wafer and from the height profile of the scanning stage; and
    - an optical device for acquiring data at each wafer point X_p, Y_p.

16. (Previously Presented) The apparatus as defined in Claim 15, wherein the optical device is a camera for acquiring images at each wafer point X_p, Y_p.

17. (Previously Presented) The apparatus as defined in Claim 15, wherein the optical device is an optical measurement device for performing a measurement at respective wafer points X_p, Y_p.

18. (Original) The apparatus as defined in Claim 15, wherein a focusing system is provided at least for focusing onto at least one reference location X_{ref}, Y_{ref} in order to obtain a reference height value Z_{ref}.

19. (Previously Presented) The apparatus as defined in Claim 15, wherein the optical imaging system is a microscope.

20. (Previously Presented) The apparatus as defined in Claim 15, wherein the optical imaging system is a macroscope.

21. (Original) The apparatus as defined in Claim 17, wherein the measurement device is an optical spectrometer, an ellipsometer, or a layer thickness measurement system.

Evidence Appendix

None

Related Proceedings Appendix

None